

ADAPTATION ALTERNATIVES

A Vision for the Future

Until the middle of the 20th century, the North Carolina barrier islands had several villages with subsistence populations that supported small tourist and fishing industries. However, in the second half of the 20th century, the coastal barriers evolved into an economic engine that has become a critical cornerstone of North Carolina's economy. Billions of tourism dollars are generated annually. North Carolina has 21 coastal counties with 865,000 residents (10.3% of the state population) and is growing. Several ocean-front counties had 76 to 150% population growth from 1970 to 2000 (<http://maps.csc.noaa.gov/hurricanes/pop.jsp>). The islands that used to be dominated by small beach cottages are now lined with high-rise hotels, condominiums, and large vacation homes. However, there are limits to growth and type of development on migrating barrier islands. To preserve the barrier island-based, tourist/recreation economy and the natural resources upon which it is based, it is imperative that we start to develop viable, long-term management plans that include adaptation to a dynamic, mobile, and rapidly changing natural system. The possibilities are limited only by our imaginations.

Northeastern North Carolina: "A String of Pearls"

Oregon Inlet Bridge and NC Highway 12 were constructed in the 1950s and 1960s to enhance the economic development of the Outer Banks. These structures were built across Cape Hatteras National Seashore and Pea Island National Wildlife Refuge to connect eight isolated villages to the Kitty Hawk to Nags Head urban area to the north. Over the following five decades, the ocean shoreline receded, overwash and inlet processes essentially terminated, sea-level rose, and many miles of the barrier islands narrowed substantially.

Thus, it is time to rethink our approach to utilizing the island segments that are threatened by rising sea level,

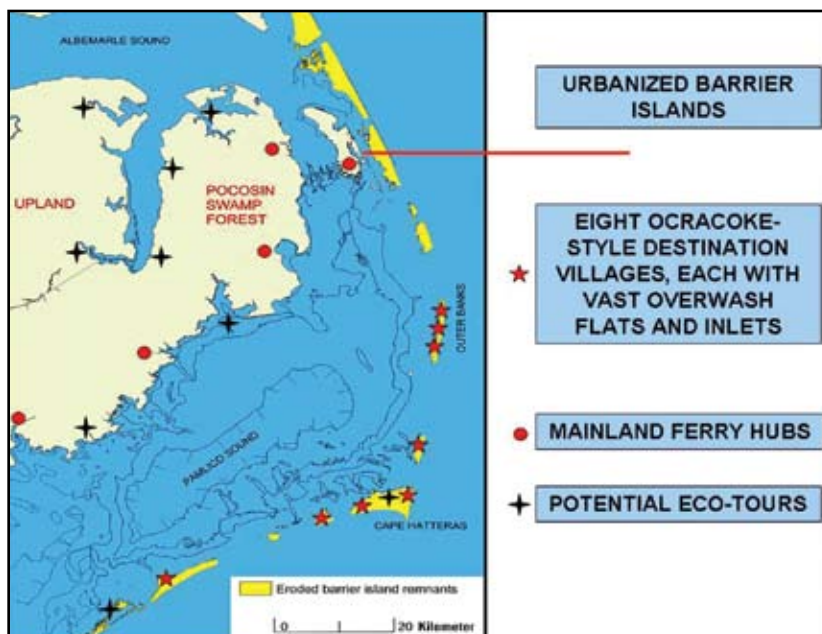


FIGURE 23. Map of the Outer Banks showing the possible remaining islands were a Katrina-like hurricane, or several smaller hurricanes, to strike the Outer Banks. Adaptation strategies could lead to several Ocracoke-style destination villages on the remaining Outer Banks. Ferry hubs in some mainland villages could be set up to service them. Fast hydrofoils or hovercraft could comprise the ferry system. A new and substantial coastal economy could be developed.

storms, and anthropogenic modifications. If we withdrew from some of the coastal highways and terminated the construction of barrier dune ridges, the islands would begin their natural rebirth as inlet and overwash dynamics would once more rebuild them. The eventual result would likely be a barrier island system with eight Ocracoke-style destination villages (Fig. 23) strung like a string of pearls upon a vast network of inlet and shoal environments that would afford us many new opportunities for economic development. We cannot stop major storms from striking North Carolina. We cannot stop sea-level from rising. We cannot stop the barrier islands' natural tendency to migrate landwards in response to rising sea level. We are now at a threshold. Large segments of the barrier islands have almost washed away. NC Highway 12 can no longer be relocated on narrow island segments. But we can still maintain a vital coastal economy and preserve the natural resource base. As a starting point for discussion, consider this possible course of action. If we were to withdraw from the Oregon Inlet bridge (except for the ends to be utilized as fishing piers)